



DOER Contaminated Sediments Research Summary

Background

Contaminated sediments in many industrial and urbanized harbors and waterways contribute to environmental degradation and inhibit the ability of the U.S. Army Corps of Engineers to dredge, transport, and relocate sediments in performance of its navigation mission. Chlorinated hydrocarbons such as dioxins are especially viewed as a potential threat to the environment and human health, often resulting in significant project delays and cost increases. Currently, sediments unsuitable for conventional disposal may be confined, contained, treated, or simply not dredged.

Description of Technology

The most common alternatives for contaminated sediments are (1) placement in confined disposal facilities (CDFs) and (2) capping, an option for containment in subaqueous sites. CDFs are located on land or in areas of relatively sheltered water. Many CDFs are near closure and future locations may include nontraditional areas such as offshore. Treatment to reclaim CDF capacity may be promising at certain sites. Capping has significant potential as a disposal alternative, but issues related to long-term effectiveness and application in deeper waters or high-energy environments require additional investigation. The Corps' Dredging Operations and Environmental Research (DOER) Program addresses high-priority research needs aimed at reducing costs associated with assessing the potential impacts associated with contaminated sediments and increasing the reliability and acceptability of CDF and capping options for sediment management.

Corps scientists and engineers develop and validate contaminant controls, treatment methods, and management techniques for CDFs. Design criteria for treatment and/or control of toxic contaminants including low-cost, effective methods for CDF management to meet State Water Quality Certification requirements are emphasized in this research. Research on filtration treatment structures and enhanced biodegradation of contaminants in CDFs is the highest priority.

Research on environmental aspects of capping and CDFs is integrated with research on physical aspects under the DOER Nearshore and Offshore Placement focus area to provide comprehensive guidance for these management options.

Benefits

Improved cost-effectiveness of identification and assessment procedures, enhanced ability to reuse existing disposal capacity for contaminated materials, and streamlined design and management techniques are among the benefits of this research.

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